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## 13 Organisational capital and competence building

*Anjali Bakhru*

### Introduction

The terms ‘knowledge economy’ or ‘knowledge society’ have become increasingly accepted, and form part of the management lexicon as recognition grows of the valuable role that intangible assets and knowledge perform in firm success. The challenge of managing and developing these assets is nevertheless a real and complex task. Those assets which potentially contribute the most value to firms are often difficult to measure, given that they are intangible and even difficult to identify because of their lack of visibility. While the heightened importance and role of intellectual property is emphasised within a knowledge economy, less transparent is the value of knowledge, which tends to be more tacit and bound up with individuals in the performance of their specific task roles. Given that the value of these assets is increasingly assumed in respect of their realised and potential contribution to competitive advantage, the focus of this chapter is the means through which firms manage and develop their ‘organisational capital’ over time.

In order to address this issue, two perspectives on organisational capital are provided. First, an intellectual capital approach illustrates that research has begun to adopt a dynamic perspective. While the traditional emphasis has been on assessing and measuring an organisation’s intellectual capital, there is increasing appreciation of the need to explore the means through which organisational capital and its constituent knowledge stocks can be developed and enhanced over time. The second perspective presented here is a capabilities-based perspective, which is rooted in the resource-based view. A dynamic approach is implicit in a capabilities-based perspective with the emphasis on organisational process. Given the centrality of organisational adaptation and change to sustaining competitive advantage from a resource-based perspective, recent work on dynamic capabilities directly addresses the issue of ongoing competence development needed for organisational adaptation and renewal.

### Identifying organisational capital

The term 'organisational capital' is sometimes used interchangeably with the term 'intellectual capital'. Typically, an intellectual capital approach emphasises the value of knowledge in its different forms and applications within the organisation. Bontis (2002), for example, defines a firm's intellectual capital as the stock of its human capital, its structural capital and its relational capital. Human capital is referred to as the knowledge that is embedded within individuals, and which often proves difficult to codify. The implication is that the value of human capital is the tacit knowledge of individuals, which affects how tasks are carried out and ultimately task performance itself. In contrast, structural capital is the knowledge that is embedded within an organisation's processes and procedures, and which is therefore more likely to be codified, such as in the form of operating manuals or hard-coded in software and systems. And finally, the third type of capital identified is relational capital. It refers to the knowledge that can be gleaned externally from customers, suppliers, the government or trade and industry associations and, hence, it represents the potential of 'ex-firm intangibles'.

While there is broad agreement over the value to firms of their organisational or intellectual capital, there exists some divergence in the underlying meaning of these terms. For example, organisational capital is used also to denote a specific categorisation of knowledge similar in meaning to structural capital above. Subramaniam and Youndt (2005: 451) refer to organisational capital as 'the institutionalised knowledge and codified experience residing within and utilized through databases, patents, manuals, structures, systems and processes'. Alternatively, organisational capital is used to refer to a specific group of elements. Martin-de-Castro *et al.* (2006), for example, refer to organisational capital as comprising the culture, structure, and organisational learning of a firm. While the former definition focuses on organisational knowledge, the latter encompasses all the tangible and intangible elements of an organisation through which knowledge is both developed and transferred over time. In other words, definitions of intellectual or organisational capital highlight the value of a number of intangible assets and knowledge-based assets – from the corporate culture, which affects both the actions and behaviours of employees, to the knowledge embodied in an organisation's intellectual property. The problem facing managers and researchers is a complex one. Terms such as 'organisational capital', for example, are not uniformly defined and interpreted, and different elements of intellectual capital are likely to vary in importance across firms and even over time. The further difficulty lies, therefore, in identifying the competences organisations need in order to develop their intellectual or organisational capital.

### Linking organisational capital to competitive advantage

Common to both an intellectual capital perspective and a capabilities perspective is the resource-based view, which highlights the link between a firm's intangible assets and its competitive advantage. From the 1980s to the present day, the contribution of intangible assets to the value of publicly-traded companies is

estimated to have doubled. In the case of American companies, for example, it is estimated to have grown from forty per cent to seventy-five per cent.<sup>1</sup> Consideration of competitive advantage in a dynamic context suggests, however, that the notion of sustainability is a limited one, and it is widely accepted that there is a need to 'innovate or die' for success in a knowledge economy. The innovation implicit in organisational adaptation is likely to depend, in part, on the firm's intellectual capital or knowledge assets. The implication is, therefore, that an imperative exists to both enhance and renew the firm's intellectual capital base.

Bontis' (2002) definition of intellectual capital suggests that knowledge might be considered to be a category both separate from, as well as integral to, a firm's intangible assets, given that much potentially valuable knowledge is that which is not codified and tends to be embedded in individuals rather than in systems, or protected in the form of intellectual property. While structural capital focuses on the systems and processes through which knowledge can be stored, human and relational capital are distinguished by the fact that both types of capital can be considered to be both a source of knowledge and, importantly, a source for renewal. Bontis (2002: 631) explains that the importance of human capital lies in the fact that 'it is a source of innovation and strategic renewal, whether it is from brainstorming in a research lab, daydreaming at the office, throwing out old files, reengineering new processes, improving personal skills, or developing new leads in a sales representative's little black book'. In other words, human capital is not only a stock of knowledge, but also a source of knowledge renewal, since the essence of human capital is the underlying intelligence of the individual. The challenge is, nevertheless, to identify whether there are any general or specific competences of individuals which are more valuable than others.

The value of entrepreneurial skills, given the role of entrepreneurship in idea generation and business opportunity recognition, is recognised as a force for exploration, even within established organisations (Shane, 2000; Alvarez and Busenitz, 2001). It is within research on entrepreneurship that there has been an attempt to link venture success to individual competences and to identify whether successful entrepreneurs share common personality characteristics. Typical of this approach are studies such as that of Markman and Bacon (2003), which shows that the most successful entrepreneurs are those exhibiting the characteristics of self-efficacy, opportunity recognition, personal perseverance, human and social capital, and superior social skills. The implications of such research for organisations operating in a knowledge economy are self-explanatory. Depending on the degree to which these characteristics are innate to individuals, organisations might seek to adopt certain selection criteria in employee recruitment or to favour training instead. However, the characteristics identified also serve to demonstrate the vagueness with which terms such as 'human capital' and 'social capital' are used. While the value of human capital could be considered to relate, in part, to the entrepreneurial abilities of individuals, Markman and Bacon (2003) suggest that entrepreneurial abilities are, in turn, a function of the human and social capital of individuals. In other words, human and social capital are sometimes considered a requirement as well as an outcome of competence development.

Within the literature, there have also been studies that have aimed to address directly the role of intellectual capital, and to assess the link between a firm's intellectual capital and its ability to innovate. Subramaniam and Youndt (2005) acknowledge that, while the link between knowledge and innovation is widely-accepted, there is little understanding of how knowledge links to specific capabilities. Conducting a longitudinal, US-based study across a diverse sample of 93 organisations, they assesses how the human, organisational and social capital elements of intellectual capital affect innovation. The theoretical basis of this study relates to the fact that different types of knowledge affect an organisation's ability to innovate incrementally or radically. It is argued that organisational capital is conducive to incremental innovation, since it refers to knowledge which is codified and preserved via an organisation's systems and processes, and is likely to reinforce existing knowledge rather than transform it. Social capital, as represented by the role of group or team work, enables interaction and an exchange of ideas and, hence, serves to refine knowledge; while human capital is most likely to transform knowledge on the basis that individuals are themselves likely to be the dominant source of new knowledge within organisations. Their findings support the role of organisational capital in enabling incremental innovation, although social and human capital have a positive effect on radical innovation only in combination. The interactive effect between social and human capital reinforces prior research on the role of individuals as the source of new knowledge (Grant, 1996) and highlights their role in the transfer of new knowledge prior to the development of routines and capabilities (Bakhr, 2004). A primary benefit of this approach is that it specifies the role played by different types of capital in enabling organisational adaptation. Its disadvantage is that it is less conclusive in terms of identifying the specific competences that underpin and augment the different types of capital. For example, in Subramaniam and Youndt's (2005) study, constructs for the different types of capital are subjective and rely on respondent perceptions to statements such as 'our employees are highly skilled' and 'our employees are creative and bright' in respect of human capital. However, this research suggests that value is realised through the interaction and interdependency between different types of intellectual or organisational capital.

While the traditional focus of research on intellectual capital is on assessing and measuring different types of intellectual capital, research is increasingly reflecting the need to account for the complex operational reality of organisations. Marr (2006), for example, discusses not only the interdependencies and interactions of intangible assets with each other, but also with the tangible assets in which they might be embedded. While this further highlights the difficulties of identifying specific competencies, it directly acknowledges that elements of a firm's intellectual capital base are not productively valuable in isolation. As it will be shown, the advantage of a capabilities perspective is that it directly addresses the issue of resource co-ordination and combination with a focus on process.

**A capabilities perspective**

Similar to research on intellectual capital, research relating to the RBV continues to assess the contribution of valuable resources to competitive advantage (Ahuja and Katila, 2004; Dutta *et al.*, 2005; Ethiraj *et al.*, 2005). The origins of the RBV lie in the VRIN approach developed by Barney (1991), which argues that competitive advantage is attributable to those resources which are valuable, rare, inimitable and non-substitutable. Value is ultimately associated with inimitability, and the most valuable resources are likely to be those intangible resources which are harder to imitate, such as an organisation's brand, its corporate culture or its intellectual property. At the same time, the existence of causal ambiguity and the role of path dependency in the development of organisational capabilities over time points to the potentially more enduring advantage provided by capabilities, where capabilities refer to the capacity at an organisational level to perform a specific task or group of tasks (Grant, 1991). Research on new market entry and research on firm diversification (Chandler, 1992; Grant, 1988, 1996; Klepper and Simons, 2000; Markides and Williamson, 1994) illustrates the value of existing capabilities in terms of the ability to leverage and replicate existing capabilities to a new business or in the application of prior learned experience to a new setting. Klepper and Simons (2000) show that successful pioneers in the US television industry were those entrants who could build on complementary capabilities and apply the experience they had acquired within the radio industry. This highlights the critical role of capabilities in enabling organisational adaptation, which is necessary for survival in the long term at least.

Organisational change is an inevitable and ongoing challenge faced by organisations. Miller and Shamsie's (1995) study of the Hollywood film studios showed how, during a period of environmental stability from 1936 to 1950, property-based resources were valuable, with the emphasis on film production on-site in studios, film distribution through owned chains of movie theatres, and film stars employed on long-term contracts. From the 1950s, the situation altered as the industry experienced significant environmental uncertainty following the disbandment of movie theatre chains in light of an anti-trust ruling. Knowledge-based resources came to be valued more highly as teams of production staff and film stars were brought together on a project basis and films were shot on location. The study showed that the firms that prospered in each period were those with the requisite endowment of either property-based or knowledge-based resources. While some environmental shifts can be considered to be significant (requiring radical innovation), such as in the case of the Hollywood film industry, many more require the level of adaptation associated with incremental innovation. For many firms, for example, entry into online markets left existing business models intact, requiring only the addition of a front-end web interface for customers to transact online. Innovation, from a capabilities perspective, is clearly focused on an organisation's ability to adapt. Over a period of time, a firm's ability to innovate requires consideration of an organisation's capabilities and its capacity to alter these as an addition to the entrepreneurial mindset emphasised from an intellectual capital approach.

Throughout the literature, there is recognition of a paradox in relation to capabilities – while capabilities are critical in enabling change, the ability to change or adapt capabilities themselves is viewed as fraught with difficulties, since capabilities are subject to the constraints of path dependency as well as structural and cognitive inertia. The challenge is therefore to consider how to make them more dynamic, and the appeal of ‘dynamic capabilities’ as a concept is thus as a means of overcoming the rigidities inherent in adapting capabilities. From a competence-building perspective, however, it is possible to overlook the fact that we often need only to improve our capabilities rather than change them in any significant way. Capabilities are not finite, and the degree to which they are developed is largely a matter of managerial deliberation, subject to satisficing criteria linked to firm performance (Winter, 2000). Helfat and Peteraf’s (2003) discussion of a ‘capability life cycle’ serves to reinforce the notion that capabilities evolve over time through various stages such as birth, growth and decline. However, what we understand about the capability development process itself is a matter of degree, given that research in this area has been less systematic, particularly in relation to providing empirical verification at the micro process level (Bakhru, 2007). One exception is Montealegre’s (2002) study, which demonstrates how development of a capability in e-commerce at a stock exchange itself relied upon the existence of other key resources and capabilities. Specific capabilities that formed a pre-requisite for development during different stages included a capability to strategise, a capability to be flexible and, finally, a capability to integrate and engender trust. The need for strategic integration, for example, involved a number of tasks, including combining the various business and personal skills and functional backgrounds of managers to create revenue-producing products and services, while at the same time ensuring integration with existing organisational processes. In turn, the capability to integrate was itself facilitated by the exchange’s long-term view, information technology and organisational culture, as well as by specific actions directed toward gaining internal commitment and investing in complementary infrastructure. In other words, competence-building itself requires integration of a range of other key capabilities and resources to support the development process.

### **Dynamic capabilities**

A dynamic capabilities perspective is an extension of a capabilities approach and, as stated, its appeal lies in its potential to offer a panacea to resolving the rigidities inherent in capabilities over time and therefore as an attempt to make capabilities more dynamic. While capabilities are the means through which resources are configured, dynamic capabilities can be considered to be the means through which resources and capabilities are reconfigured and, hence, are central to competence-building over time. The focus is on the processes directed towards effecting change. In line with a capabilities approach, a dynamic capabilities approach advocates that competitive advantage cannot be sustained but rather that it needs to be renewed. As such, dynamic capabilities cannot be a source of sustained competitive advantage but rather the source of renewing competitive

advantage. Teece *et al.*'s (1997) original conceptualisation of dynamic capabilities stemmed from an interest in explaining how organisations can create and sustain competitive advantage in dynamic or rapidly changing environments. The ability of organisations to reconfigure themselves is not left to chance, they argue, but that it is a learned skill. The field has developed as research has attempted to refine and develop our understanding of what dynamic capabilities are.

A patterned element of activity is emphasised in the dynamic capabilities literature (Helfat *et al.*, 2007). Since Teece *et al.*'s (1997) seminal paper, two main approaches to dynamic capabilities have been outlined, where one approach is distinguished by its attempt to describe mechanisms of making capabilities more dynamic, while another focuses on a routinised approach to change (see also Schreyögg and Kliesch-Eberl, 2007). According to the former approach developed by Eisenhardt and Martin (2000), dynamic capabilities are viewed as specific and identifiable processes. In moderately stable markets, dynamic capabilities take on the appearance of other organisational capabilities, i.e. new product development, strategic decision-making and alliancing. Commonalities in practice across firms and even best practice across firms suggests that dynamic capabilities might even share key features across firms. Alternatively, it is argued that dynamic capabilities resemble a routinised approach to change, with routines created for the specific purpose of adapting existing operational routines (Zollo and Winter, 2002; Winter, 2003). As Zollo and Winter (2002: 340) state, 'dynamic capability is exemplified by an organisation that adapts its operating processes through a relatively stable activity dedicated to process improvements'.

Both approaches emphasise the deliberate and managed process of creating dynamic capabilities, at least in relatively stable environments. Under conditions of high environmental volatility, however, both approaches break down somewhat and show greater convergence. In more dynamic markets, the means required to respond to change are likely to operate on the basis of simple rules developed (Eisenhardt and Martin, 2000) or to rely on *ad hoc* rather than routinised processes (Zollo and Winter, 2002). The implication for competence building is, therefore, that firms rely to a greater extent on improvisation, experimentation and problem-solving in more volatile environments. We can infer that the challenge of responding to change, in terms of competence building, becomes more difficult when we need to change most.

An empirical study aimed at 'unbundling' the concept of dynamic capability is that of Verona and Ravasi (2003), who researched Oticon (a Danish hearing aid manufacturer). The company is renowned for its capacity to develop and launch new products and, since the introduction of new products is one of the primary drivers of change and renewal at the firm level, the study focuses on Oticon's dynamic capability in product development and the knowledge-based processes which underpin them. The findings illustrate the importance of leveraging resources such as other actors, physical resources, the structure and systems, as well as the company culture. It further highlights the importance of knowledge in engendering dynamic capabilities, and ensuring knowledge integration and the associated management of knowledge resources. While organisational structure assumes



importance for creating flexibility, where this was achieved through the firm's project-based organisation, it was notably the absence of other physical and structural barriers within the firm that allowed the integration of knowledge that would otherwise be dispersed across the organisation.

The debate over the form and substance of dynamic capabilities continues. In line with prior research, Helfat *et al.* (2007:1) define dynamic capability as 'the capacity of an organisation to purposefully create, extend or modify its resource base'. In a departure from prior research, they extend the conceptualisation of dynamic capabilities. They argue that dynamic capabilities come in many forms, albeit directed at effecting change: they allow firms to enter new businesses, extend old businesses, and create new products and processes. They also further refer to the leadership and entrepreneurial capabilities of individual managers as part of an organisation's dynamic capability set, as well as the concept of relational capabilities, which enables firms to access the resources and capabilities of alliance partners. The notion of dynamic capabilities referred to by Helfat *et al.* (2007) is an increasingly abstract one. The latter are no longer defined as specific organisational processes themselves, but rather they rely on organisational processes for their fulfilment. However, this development is therefore a move closer to an intellectual capital perspective as knowledge and, in particular, access to the knowledge of individuals as well as organisations is increasingly accentuated in relation to competence development.

## Discussion and conclusions

The aim of this chapter has been to approach the topic of competence-building in relation to organisational capital from two different perspectives. Both an intellectual capital and a capabilities approach share much in common, particularly in relation to the contribution of intangible assets and knowledge to an organisation's competitive advantage. The complexity of the challenge of identifying those competences which are relevant and important to renewing and developing valuable organisational capital is highlighted in both approaches and demonstrates increasing convergence in approach. While there is need for more systematic empirical research, studies to date demonstrate that any attempt to build a competence in one area itself relies on the combination and co-ordination of other resources and capabilities across the organisation. Underpinning competence or capability development is the assumption that a system of integrated skills is required to leverage the organisation's capital. From an intellectual capital perspective, the challenge is approached more directly in relation to the task of knowledge renewal. It supports the need for competence development at the individual as well as the organisational level, where the focus relates ultimately to the means through which organisations are able to create and renew their knowledge assets. Recent advances in relation to dynamic capabilities, however, also point to the importance of integrating knowledge at the level of the individual as well as the organisation, since the leadership and entrepreneurial capabilities of individual managers are increasingly considered to be part of an organisation's dynamic capability set (Helfat *et al.*, 2007). In

conclusion, prior research highlights that competence building is reliant upon effective management of the complex interaction of individual and organisational level knowledge, and that it is important to focus on ensuring that firm processes are designed to provide the means through which dispersed knowledge can be integrated across the organisation.

#### Note

- 1 'A market for ideas – A survey of patents and technology', *The Economist*, October 2005.

#### References

- Ahuja, G. and R. Katila (2004) 'Where do resources come from? The role of idiosyncratic situations', *Strategic Management Journal*, 25: 887–907.
- Alvarez, S. A. and L. W. Busenitz (2001) 'The entrepreneurship of resource-based theory', *Journal of Management*, 27: 755–775.
- Bakhru, A. (2004) 'Managerial knowledge to organisational capability: new e-commerce businesses', *Journal of Intellectual Capital*, 5(2): 326–336.
- Bakhru, A. (2007) 'Creating and developing organisational capabilities – do we know more than we can say?', *International Journal of Learning and Intellectual Capital, Special Issue on Twenty Years after The Resource-Based Theory of the Firm: New Challenges*, 4(1/2): 174–186.
- Barney, J. B. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, 17(1): 99–120.
- Bontis, N. (2002). 'Managing organizational knowledge by diagnosing intellectual capital: Framing and advancing the state of the field', in Choo, C.W and N. Bontis (eds) *The Strategic Management of Intellectual Capital and Organizational Knowledge*, Oxford, Oxford University Press.
- Chandler, A. (1992) 'Organizational capabilities and the economic history of the industrial enterprise', *Journal of Economic Perspectives*, 6(3): 79–100.
- Dutta, S., O. M. Narasimhan, and S. Rajiv (2005) 'Conceptualizing and measuring capabilities: Methodology and empirical application', *Strategic Management Journal*, 26: 277–85.
- Eisenhardt, K. M. and J. A. Martin (2000) 'Dynamic capabilities: What are they?', *Strategic Management Journal*, 21:1105–1121.
- Ethiraj, S. K., P. Kale, M. S. Krishnan and J. V. Singh (2005) 'Where do capabilities come from and how do they matter? A study in the software services industry', *Strategic Management Journal*, 26: 25–45.
- Feldman, M. S. (2000) 'Organizational routines as a source of continuous change', *Organization Science*, 11(6): 611–629.
- Grant, R. M. (1988) 'On "dominant logic", relatedness and the link between diversity and performance', *Strategic Management Journal*, 9: 639–42.
- Grant, R. M. (1996) 'Prospering in dynamically-competitive environments: Organizational capability as knowledge integration', *Organization Science*, 7(4): 375–87.
- Helfat, C. E. and M. A. Peteraf (2003) 'The dynamic resource-based view: Capability lifecycles', *Strategic Management Journal*, 24: 997–1010.
- Klepper, S. and K. L. Simons (2000) 'Dominance by birthright: Entry of prior radio producers and competitive ramifications in the US television receiver industry', *Strategic Management Journal*, 21(10/11): 997–1016.
- Markides, C. and P. J. Williamson (1994) 'Related diversification, core competencies and corporate performance', *Strategic Management Journal*, 15(5):149–165.
- Markman, G. D. and R. A. Bacon (2003) 'Person-entrepreneurship fit: Why some people are

- more successful as entrepreneurs than others', *Human Resource Management Journal*, 13(2): 281–301.
- Marr, B. (2006). 'Using strategic value creation maps to visualize intangible performance drivers', in Bonfour, A. (ed.). *Capital Immateriel, Connaissance et Performance*, Paris, L'Harmattan.
- Martin-de-Castro, G., J.E. Navas-Lopez, P. Lopez-Saez, & E. Alama-Salazar (2006) 'Organizational capital as competitive advantage of the firm', *Journal of Intellectual Capital*, 7(3): 324–337.
- Miller, D. and J. Shamsie (1995). 'A contingent application of the resource-based view of the firm: The Hollywood studios', *Academy of Management Best Papers Proceedings*, pp.57–61.
- Montealegre, R. (2002) 'A process model of capability development: Lessons from the electronic commerce strategy at Bolsa de Valores de Guayaquil', *Organization Science*, 13(5): 514–31.
- Schreyögg, G. and M. Kliesch-Eberl (2007). 'How dynamic can organizational capabilities be? Towards a dual-process model of capability development', *Strategic Management Journal*, 28:913–933.
- Shane, S. (2000) 'Prior knowledge and the discovery of entrepreneurial opportunities', *Strategic Management Journal*, 11: 448–469.
- Shane, S. (2003) *A general theory of entrepreneurship: The individual-opportunity nexus*, Cheltenham, Edward Elgar.
- Subramaniam, M. and M. A. Youndt (2005) 'The influence of intellectual capital on the types of innovative capabilities', *Academy of Management Journal*, 48(3): 450–463.
- Teece, D., G. Pisano and A. Shuen (1997) 'Dynamic capabilities and strategic management', *Strategic Management Journal*, 18: 509–533.
- Verona, G. and D. Ravasi (2003) 'Unbundling dynamic capabilities: an exploratory study of continuous product innovation', *Industrial and Corporate Change*, 12(3):577–606.
- Winter, S. G. (2000) 'The satisficing principle in capability learning', *Strategic Management Journal*, 21: 981–96.
- Winter, S. G. (2003) 'Understanding dynamic capabilities', *Strategic Management Journal*, 24: 991–995.
- Zollo, M. and S. G. Winter (2002) 'Deliberate learning and the evolution of dynamic capabilities', *Organization Science*, 13(3): 339–51.